

IN THE CLAIMS

Please amend the claims as indicated in the following listing of claims, which replaces all previous listings of claims.

1. (Currently Amended) A method for maintenance of an undifferentiated stem cell, said method comprising exposing ~~[[a]]~~ the stem cell to ~~a member of the transforming growth factor-beta (TGF β) family of proteins~~ Activin A, or exposing the stem cell to Activin A in combination with a member of the fibroblast growth factor (FGF) family of proteins, ~~[[or]]~~ nicotinamide (NIC), or both, wherein the Activin A, FGF family member, and NIC are provided in an amount sufficient to maintain the cell in an undifferentiated state for a sufficient amount of time to achieve a desired result.

2. (Cancelled)

3. (Original) The method of claim 1, wherein the method comprises exposing said cell to a TGF β family member, an FGF family member, and NIC.

4. (Cancelled)

5. (Original) The method of claim 1, wherein the FGF family member is keratinocyte growth factor (KGF).

6. (Original) The method of claim 1, wherein said exposing results in growth of said cell.
7. (Original) The method of claim 1, wherein said exposing is repeated at least one time.
8. (Original) The method of claim 1, wherein said stem cell is a mammalian stem cell.
9. (Original) The method of claim 1, wherein said stem cell is a human stem cell.
10. (Original) The method of claim 1, wherein said stem cell is an embryonic stem cell.
11. (Original) The method of claim 1, wherein the desired result comprises culturing said stem cell for ten passages or more.
12. (Original) The method of claim 1, wherein the desired result comprises culturing said stem cell for thirty passages or more.

13. (Currently Amended) The method of claim 1, wherein the ~~TGF β family member~~
Activin A shows 30% or greater sequence identity with SEQ ID NO:1.

14. (Currently Amended) The method of claim 1, wherein the ~~TGF β family member~~
Activin A shows 80% or greater sequence identity with SEQ ID NO:1.

15. (Currently Amended) The method of claim 1, wherein the ~~TGF β family member~~
Activin A shows 90% or greater sequence identity with SEQ ID NO:1.

16. (Currently Amended) The method of claim 1, wherein the ~~TGF β family member~~
Activin A shows 95% or greater sequence identity with SEQ ID NO:1.

17. (Currently Amended) The method of claim 1, wherein the ~~TGF β family member~~
Activin A shows 99% or greater sequence identity with SEQ ID NO:1.

18. (Original) The method of claim 1, wherein the FGF family member shows 30%
or greater sequence identity with SEQ ID NO:17.

19. (Original) The method of claim 1, wherein the FGF family member shows 80%
or greater sequence identity with SEQ ID NO:17.

20. (Original) The method of claim 1, wherein the FGF family member shows 90% or greater sequence identity with SEQ ID NO:17.

21. (Original) The method of claim 1, wherein the FGF family member shows 95% or greater sequence identity with SEQ ID NO:17.

22. (Original) The method of claim 1, wherein the FGF family member shows 99% or greater sequence identity with SEQ ID NO:17.

23. (Currently Amended) A composition comprising
a) a culture medium and
b) ~~a TGF β family member,~~ Activin A in combination with an FGF family member, NIC,
~~or a combination of two or more~~ both of these.

24. (Cancelled)

25. (Original) The composition of claim 23, wherein the FGF family member is KGF.

26. (Original) The composition of claim 23, further comprising a stem cell.

27. (Original) The composition of claim 26, wherein said stem cell is a mammalian stem cell.

28. (Original) The composition of claim 26, wherein said stem cell is a human stem cell.

29. (Original) The composition of claim 26, wherein said stem cell is an embryonic stem cell.

30. (Currently Amended) The composition of claim 23, wherein the ~~TGF β family~~ member Activin A shows 30% or greater sequence identity with SEQ ID NO:1.

31. (Currently Amended) The composition of claim 23, wherein the ~~TGF β family~~ member Activin A shows 80% or greater sequence identity with SEQ ID NO:1.

32. (Currently Amended) The composition of claim 23, wherein the ~~TGF β family~~ member Activin A shows 90% or greater sequence identity with SEQ ID NO:1.

33. (Currently Amended) The composition of claim 23, wherein the ~~TGF β family~~ member Activin A shows 95% or greater sequence identity with SEQ ID NO:1.

34. (Currently Amended) The composition of claim 23, wherein the ~~TGF β family member~~ Activin A shows 99% or greater sequence identity with SEQ ID NO:1.
35. (Original) The composition of claim 23, wherein the FGF family member shows 30% or greater sequence identity with SEQ ID NO:17.
36. (Original) The composition of claim 23, wherein the FGF family member shows 80% or greater sequence identity with SEQ ID NO:17.
37. (Original) The composition of claim 23, wherein the FGF family member shows 90% or greater sequence identity with SEQ ID NO:17.
38. (Original) The composition of claim 23, wherein the FGF family member shows 95% or greater sequence identity with SEQ ID NO:17.
39. (Original) The composition of claim 23, wherein the FGF family member shows 99% or greater sequence identity with SEQ ID NO:17.
40. (Currently Amended) A composition comprising ~~a combination of two or more of~~
a) ~~at least one purified TGF β family member protein~~ purified Activin A, b) at least one purified FGF family member protein, and ~~[[3)]]~~ c) purified NIC.

41. (Currently Amended) The composition of claim 40, ~~which is a culture medium~~
~~for stem cells~~ further comprising at least one stem cell.

42. (Original) The composition of claim 41, wherein the stem cells are mammalian
stem cells.

43. (Original) The composition of claim 41, wherein the stem cells are human stem
cells.

44. (Original) The composition of claim 41, wherein the stem cells are embryonic
stem cells.

45. (Cancelled)

46. (Original) The composition of claim 41, wherein the FGF family member is
KGF.

47. - 60. (Cancelled)

61. (Currently Amended) A method for maintenance of an undifferentiated stem cell,
said method comprising:

exposing a stem cell to ~~a member of the transforming growth factor-beta (TGF β) family of proteins;~~ (i) Activin A or (ii) Activin A in combination with a member of the fibroblast growth factor (FGF) family of proteins, ~~[[or]]~~ nicotinamide (NIC), or both, in an amount sufficient to maintain the cell in an undifferentiated state for a sufficient amount of time to achieve a desired result, wherein the stem cell is not also exposed to a feeder cell, conditioned media, or leukemia inhibitory factor.

62. (Currently Amended) ~~[[A]]~~ The composition of claim 23, comprising
~~—— a) a culture medium and~~
~~—— b) a TGF β family member, an FGF family member, NIC, or a combination of two or more of these;~~

wherein said composition does not comprise feeder cells, conditioned media, or LIF.

63. (Cancelled)

64. (Cancelled)

65. (Currently Amended) A pharmaceutical composition comprising a stem cell grown or maintained by a method comprising exposing a stem cell to ~~a member of the transforming growth factor-beta (TGF β) family of proteins;~~ Activin A or Activin A in combination with a member of the fibroblast growth factor (FGF) family of proteins, ~~[[or]]~~

nicotinamide (NIC), or both, in an amount sufficient to maintain the cell in an undifferentiated state.

66. (Cancelled)